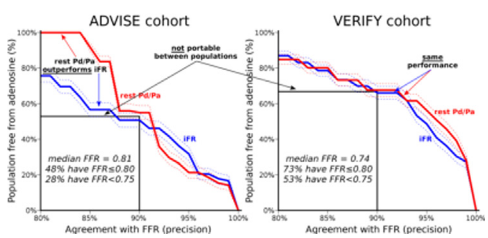
a "hybrid" strategy. In an international, multicenter, core lab study (RESOLVE) adenosine could have been avoided in ~50% of lesions while maintaining a diagnostic accuracy ≥90%. However, the size of the resulting "adenosine free" zone might differ among populations.
Methods: Two subsets of lesions from the RESOLVE study were contrasted given their different FFR distributions: ADVISE (original study, registry, and Seoul study) and VERIFY (prospective and retrospective arms).
Results: VERIFY had a significantly lower FFR distribution compared to ADVISE (Table). Fewer lesions required adenosine in VERIFY compared to ADVISE, a consistent trend over the entire spectrum of FFR agreement (Figure). No significant difference existed between iFR and Pd/Pa for avoiding adenosine, although Pd/Pa outperformed iFR in the ADVISE cohort at lower FFR agreements.

Table. Physiologic contrast between ADVISE and VERIFY cohorts

	ADVISE cohort	VERIFY cohort	p value
Number of lesions	611	654	N/A
FFR	0.81 [0.73, 0.88]	0.74 [0.65, 0.81]	<0.001
Rest Pd/Pa	0.93 [0.89, 0.97]	0.90 [0.86, 0.95]	<0.001
iFR	0.91 [0.86, 0.95]	0.87 [0.79, 0.93]	<0.001
% with FFR≤0.80	48%	73%	<0.001
% with FFR<0.75	28%	53%	<0.001
Pd/Pa and iFR correlation (R^2)	0.95	0.96	N/A



Conclusions: Different population FFR distributions affect the size of the adenosine free zone. A population whose FFR distribution centers near 0.80 offers fewer applicable lesions for avoiding adenosine as part of a hybrid strategy.

TCT-81

Doppler-flow and pressure derived hyperemic microvascular resistance measurements predict abnormal $H_2^{15}O$ PET-quantified myocardial blood flow after primary PCI

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Background: Primary percutaneous coronary intervention (PCI) leads to optimal angiographic restoration of flow in more than 90% of ST elevated myocardial infarction (STEMI) patients. However, in a large proportion of these patients, myocardial perfusion does not recover adequately despite good angiographic results. This study aimed to investigate the predictive value of intracoronary Doppler-flow and pressure measurements for restoration of myocardial perfusion in the days following a myocardial infarction. Myocardial perfusion was quantified by $H_2^{15}O$ positron emission tomography (PET) imaging.
Methods: 51 STEMI patients were included and treated with primary PCI. Directly following successful revascularization, intracoronary Doppler-flow and pressure measurements (ComboWire XT, Volcano Corporation, San Diego, California) were obtained in the culprit artery and in an unobstructed reference coronary artery. Pressure-flow derived hyperemic microvascular resistance (HMR) was defined as the ratio between distal pressure and flow velocity. $H_2^{15}O$ PET imaging was performed 4-6 days after primary PCI. To discriminate between normal and abnormal myocardial blood flow on PET imaging, the coronary flow reserve (CFR) was used. CFR was defined as the ratio between peak myocardial blood flow (MBF) after induction of hyperemia by adenosine administration and MBF under basal conditions with a cutoff value of 2.0. Subsequently, HMR was compared to PET derived MBF.
Results: The mean HMR in the culprit artery was 3.00±1.41 and 2.96±1.72 in the reference artery. In the culprit artery, HMR was significantly higher when an abnormal PET derived MBF was found (3.66±1.42 vs. 2.52±0.94; p=0.019). In the reference artery HMR was similar in patients with a normal and an abnormal MBF (3.13±1.53 vs. 2.73±1.94; p=0.531).
Conclusions: Doppler-flow and pressure derived HMR is a good predictor to discriminate between normal and abnormal PET derived myocardial blood flow in the culprit artery after primary PCI.

TCT-82

Fractional Flow Reserve versus Angiography in Guiding Management to Optimize Outcomes in Non-ST Elevation Myocardial Infarction (FAMOUS – NSTEMI) Clinical Trial: Relationships Between FFR and Angiographic Stenosis Severity at Baseline.

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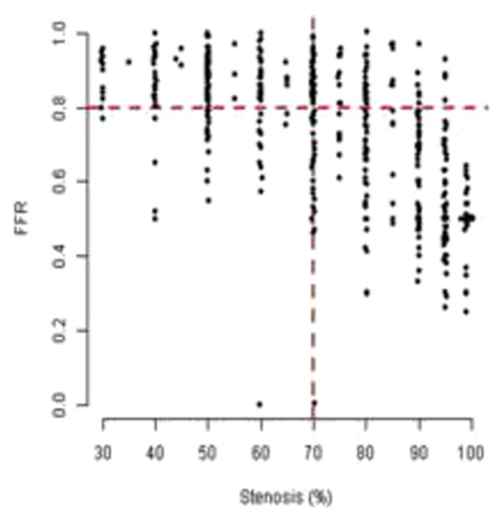
Background: Treatment decisions in the invasive management of patients with non-ST elevation myocardial infarction (NSTEMI) are usually made based on visual interpretation of the coronary angiogram. The relationships between coronary stenosis severity and myocardial fractional flow reserve (FFR) in this setting are uncertain. We hypothesized that functional assessment of coronary stenosis severity with fractional flow reserve (FFR) would differ markedly with angiography.
Methods: FAMOUS-NSTEMI (NCT01764334) is a prospective multicenter randomized double-blind controlled trial in patients with ≥1 coronary stenosis ≥30% severity (threshold for FFR measurement). Stenosis severity was assessed visually by the cardiologist in the catheter laboratory. FFR was measured in coronary arteries with a stenosis ≥30% severity including culprit and non-culprit lesions.
Results: 350 patients were randomized between October 2011-May 2013 in 6 UK hospitals. The participant characteristics were: mean ± SD age 60±15 years, 74% men, 45% history of hypertension, 14% treated diabetes, 8% prior PCI and 10% prior MI. The median (IQR) time from the index event to the initial angiogram was 3.0 (2.0, 6.0) days. The median (range) GRACE Score was 180 (8, 269). On average each patient had 1.9±0.8 angiographically diseased coronary arteries (left main 10%, RCA 58%, LAD/Diagonal 54%, Cx/OM 64%). There was marked discordance between stenosis severity and FFR (Figure 1).



Conclusions: Compared to FFR, visual assessment over-estimated angiographic lesion severity in a high proportion of cases. This relationship was at least as discordant as in FAME.